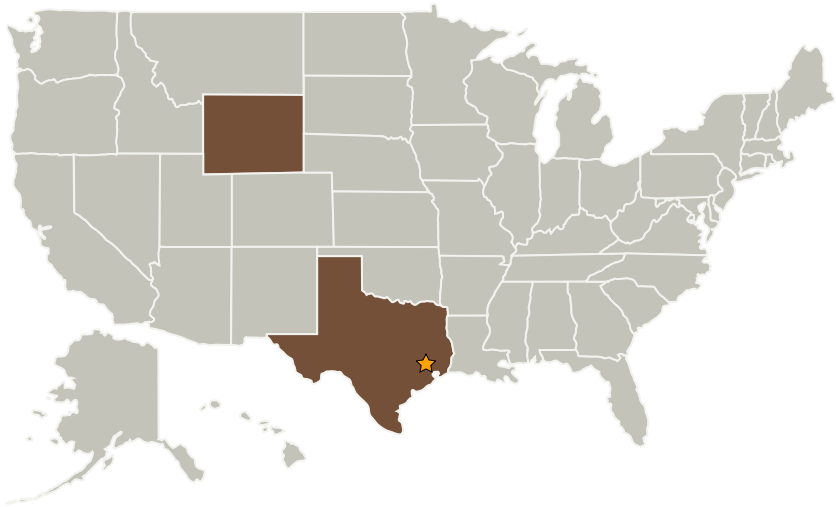
In-Space Cryogenic VOST Connect/Disconnect, Phase I

Completed Technology Project (2005 - 2005)

Project Introduction

A novel cryogenic coupling will be designed and modeled. Intended for in-space use at cryogenic propellant depots, the coupling is based on patented Venturi-Offset Technology (VOST) and will provide small fluid and heat leakage at high flows with a low pressure drop. Entirely mechanical, insertion opens the passage, removal closes the passage. Mating force and alignment requirements are small. With only eight major parts, reliability is high and mass is low. Redundant seals, integrated flow measurements, and robotic control are possible.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Big Horn Valve, Inc.	Supporting Organization	Industry	Sheridan, Wyoming

Primary U.S. Work Locations	
Texas	Wyoming

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Zachary A Gray

Technology Areas

Primary:

- TX14 Thermal Management Systems
  - TX14.1 Cryogenic Systems
    - TX14.1.1 In-space Propellant Storage & Utilization